

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-10 (Canceled)

11. (New) A polycrystalline alumina component comprising an additive, wherein the polycrystalline alumina component has an average crystal size $\leq 2\mu\text{m}$, has a relative density higher than 99.95%, and is transparent with a real in-line transmission RIT $\geq 30\%$ measured over an angular aperture of at most 0.5° at a sample thickness of 0.8mm and with a single wavelength of light λ , and wherein the additive comprises Mg oxide.

12. (New) The polycrystalline alumina component of claim 11, wherein the additive is present in an amount of at least 10ppm.

13. (New) The polycrystalline alumina component of claim 11,

wherein the additive is MgO in a quantity of at least 100ppm and at most 1000ppm.

14. (New) A discharge lamp comprising a discharge tube having a wall of a ceramic, the ceramic comprising a polycrystalline alumina component with an additive, the alumina of the polycrystalline alumina component having an average crystal size $\leq 2\mu\text{m}$, and a relative density higher than 99.95%, and being transparent with a real in-line transmission $\text{RIT} \geq 30\%$ measured over an angular aperture of at most 0.5° at a sample thickness of 0.8mm and with a single wavelength of light λ , the additive comprising Mg oxide.

15. (New) The discharge lamp of claim 14 wherein the discharge tube has an ionizable filling containing a metal halide.

16. (New) A method for forming a polycrystalline alumina component with an additive, the method comprising the acts of:
preparing a slurry of corundum power with a mean grain size $\leq 0.2\mu\text{m}$;

adding a dopant formed by a precursor containing Mg and oxides of Mg;

casting the slurry in a mold;

drying and sintering of the molded body thus formed; and performing an HIP treatment at a temperature of at least 1150°C for at least 2 hours;

wherein alumina of the component has an average crystal size $\leq 2\mu\text{m}$, and a relative density higher than 99.95%, and is transparent with a real in-line transmission RIT $\geq 30\%$ measured over an angular aperture of at most 0.5° at a sample thickness of 0.8mm and with a single wavelength of light λ , and wherein the additive comprises Mg oxide.

17. (New) The method of claim 16, wherein after the adding act, the prepared slurry is slip cast in a mold.

18. (New) The polycrystalline alumina component of claim 11, wherein the single wavelength of light λ is 645nm.

19. (New) The discharge lamp of claim 14, wherein the single

wavelength of light λ is 645nm.

20. (New) The method of claim 16, wherein the single wavelength of light λ is 645nm.